

REMARKS

Reconsideration and withdrawal of the rejections set forth in the above-mentioned Official Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1, 3-7 and 9-13 are pending in this application, with Claims 1, 10 and 11 being independent. Claim 13 was previously withdrawn from consideration. Claim 1 is amended herein. Applicant submits that no new matter has been added.

Claims 1, 3-7 and 9 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Specifically, the Examiner has alleged that in Claim 1 the phrase “wherein the average size of a pigment (A) ... is smaller than the average particle size of a pigment (B) ... wherein the pigment (A) has an average particle size of not larger than 1 μm , and the pigment (B) has an average particle size of from 0.5 μm to 10 μm ” is vague and indefinite because according to the latter part of the phrase, both particle sizes can be 0.5 μm to 1.0 μm . Without conceding the propriety of the rejection, Applicant has amended Claim 1. Applicant submits that amended Claim 1 fully complies with § 112, second paragraph. Reconsideration and withdrawal of the § 112, second paragraph, rejection are requested.

Claims 1, 3-7, 9, 11 and 12 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,203,899 (Hirose et al.) in view of EP 1 048 480 A1 (EP ‘480). This rejection is respectfully traversed.

Applicant’s invention as recited in independent Claim 1, as amended, is directed to an ink-jet recording medium having at least a light-reflecting layer and a dye-fixing layer formed in this order on a base material in a multilayer structure. The light-reflecting layer

contains two or more pigments different in chemical composition. The average particle size of a pigment (A) having a highest liquid absorbency in the pigments is smaller than the average particle size of a pigment (B) having a lowest liquid absorbency in the pigments. The pigment (A) has an average particle size of not larger than 1 μm , and the pigment (B) has an average particle size ranging from 0.5 μm to 10 μm , provided that the average particle size of the pigment (A) is smaller than the average particle size of the pigment (B). The dye-fixing layer comprises not less than 70 mass percent alumina hydrate particles.

Applicant's invention as recited in independent Claim 10 is directed to an ink-jet recording medium having at least a light-reflecting layer and a dye-fixing layer formed in this order on a base material in a multilayer structure. The light-reflecting layer contains an aluminum pigment and barium sulfate. The average particle size of the aluminum pigment is smaller than the average particle size of the barium sulfate, and the surface of the dye-fixing layer has a 20°-glossiness of not less than 20%. The dye-fixing layer includes not less than 70 mass percent alumina hydrate particles.

Applicant's invention as recited in independent Claim 11 is directed to an ink-jet recording medium having at least a light-reflecting layer and a dye-reflecting layer formed in this order on a base material in a multilayer structure. The light-reflecting layer contains an aluminum pigment and a silica pigment. The average particle size of the aluminum pigment is smaller than the average particle size of the silica pigment, and the surface of the dye-fixing layer has a 20°-glossiness of not less than 20%.

Applicant submits that none of the cited references teach or suggest important features of the present invention.

Hirose et al. is directed to a printing medium including a liquid-absorbent base material, an ink-receiving layer provided on the base material, and comprising a pigment, a binder and a cationic substance, and a surface layer composed principally of cationic ultrafine particles as inorganic particles. Hirose et al. discloses many pigments, including silica and alumina, and discloses that the pigments may be used singly or in any combination. As the Examiner recognizes, however, Hirose et al. does not disclose the claimed relationship between the pigment particles and does not disclose use of barium sulfate.

EP '480 discloses an ink-jet recording material having pigment layers. Applicant notes that this application is a counterpart to JP 2001-10222, which is described in the present specification. Further, Applicant notes that U.S. Patent No. 6,502,935 (Barcock et al.) is a counterpart to EP '480. The Examiner suggests that EP '480 discloses an ink-jet recording material having an underlayer and an overlayer (which corresponds to the dye-fixing layer of the present invention), and that the underlayer includes barium sulfate and alumina or silica material, where the alumina has a particle size of 50-150 nm and silicic material has a particle size of 200-300 nm. Applicant respectfully disagrees. The above-quoted particle sizes are for particles included in the overlayer not the underlayer. (*See* col. 2, lines 62-66 of Barcock et al.) Accordingly, Applicant submits that the Examiner's reliance on this disclosure is misplaced.

Regarding the particle diameters of the components in the underlayer, EP '480 merely discloses that the aluminum oxide has an average particle size of 0.7-5 μm , preferably 1-3 μm , and the silica has an average particle diameter of 0.7-5 μm , preferably 3-5 μm . Further, in the Examples of EP '480, the aluminum oxide used in the underlayer has an average particle size of 1.45 μm , and the silica used in the underlayer has an average particle size of 3-5 μm , (*see*

Table 1, and note that the aluminum oxide and silica are not used in combination). These particles correspond to pigment (A) of the present invention. EP '480 discloses that barium sulfate, which corresponds to pigment (B) of the present invention, preferably has an average particle size of 0.7-1.2 μm . This is the average particle size of the barium sulfate used in the Examples, as well. Thus, according to the Examples of EP '480, the pigment (A) particles have average particle sizes of 1.45 μm and 3-5 μm , whereas the pigment (B) particle has an average particle size of 0.7-1.2 μm . This disclosed relationship of the pigment (A) and pigment (B) particles is opposite Applicant's claimed invention, and can result in a recording medium that loses its surface smoothness after reception of the ink. (See page 23, line 16 through page 25, line 5 of Applicant's specification).

Thus, Applicant submits that the proposed combination of Hirose et al. and EP '480 would not teach or suggest that the pigment (A) has an average particle size of not larger than 1 μm , and the pigment (B) has an average particle size ranging from 0.5 μm to 10 μm , provided that the average particle size of the pigment (A) is smaller than the average particle size of the pigment (B), as recited in Claim 1, that the average particle size of the aluminum pigment is smaller than the average particle size of the barium sulfate, as recited in Claim 10, or that the light-reflecting layer contains an aluminum pigment and a silica pigment, and wherein the average particle size of the aluminum pigment is smaller than the average particle size of the silica pigment, as recited in Claim 11. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 103.

Applicant submits that the present invention is patentably defined by independent Claims 1, 10 and 11. Dependent Claims 3-7, 9 and 12 are also allowable, in their own right, for

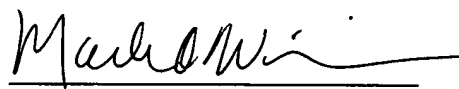
defining features of the present invention in addition to those recited in independent Claims 1, 10 and 11. Individual consideration of the dependent claims is requested.

Applicant submits that the present application is in condition for allowance.

Favorable reconsideration, withdrawal of the objections and rejections set forth in the above-noted Office Action, rejoinder of withdrawn Claim 13, and an early Notice of Allowability are requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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